--Background of the Invention:

A2

Field of the Invention:

The invention lies in the field of semiconductor circuits.--.

Replace the paragraph beginning on page 2, between line 5, with:

--The invention provides a power semiconductor switch that overcomes the hereinafore-mentioned disadvantages of the

A3

heretofore-known devices of this general type and that is simpler in construction and that can block high voltages in both directions.

Summary of the Invention:--.

Replace the first paragraph on page 3, with:

--Brief Description of the Drawings:

A4

FIG. 1 is a diagrammatic cross-sectional view of a semiconductor structure according to the invention; and

FIG. 2 is graph showing a profile of the electric field against the vertical direction of the structure of FIG. 1 for different polarities.--.

Replace the paragraph beginning on page 3, line 5, with:

--Description of the Preferred Embodiments:

A5

Referring now to the figures of the drawings in detail and first, particularly to FIG. 1 thereof, there is shown a cross-sectional detail from an IGBT structure. A first base region 1 is essentially formed by the semiconductor body provided with a basic doping. The basic doping is preferably a doping for weak n-type conductivity. In accordance with conventional IGBT structure, also present are a second base region 4 of opposite sign and emitter regions 3, 5. The sequence of these regions has conductivities having alternating signs in the vertical direction. In the second base region 4, which is formed in a manner extending as far as the top side of the semiconductor body, a channel is formed on the top side, which channel can be controlled by a gate electrode G applied above the channel and preferably isolated from the channel by a dielectric. The second base region 4 is preferably formed as a p-conducting doped well in the n^--conducting doped semiconductor body. Situated within the well is the region 5 doped oppositely thereto (in the example shown, the region 5 is n-conducting). The emitter region 5 is connected to the source contact S. The source contact S also makes contact with the second base region 4.

A5 cont.

Situated on the rear side of the component is a further doped region 3, which, as an emitter region, is doped oppositely to the first base region 1 and is provided with a drain contact D. In accordance with a conventional punch-through

dimensioning, the thickness of the semiconductor body is chosen to be smaller than in IGBTs with non-punch-through dimensioning, and a buffer layer 2 whose conductivity has the same sign as that of the first base region 1 is disposed between the first base region 1 and the region provided with the drain contact (p-type emitter). The buffer layer 2 is preferably doped with a dose of $1 \cdot 10^{12}$ cm^{-2} to $4 \cdot 10^{12}$ cm^{-2} (integral over the doping profile). In the blocking operating state of the component, in contrast to a conventional layer structure with buffer layer, the electric field for the most part falls in the first base region 1.

A5 cond.

A typical profile of the electric field in the vertical direction of the component is illustrated in FIG. 2 for the case where the drain terminal is positive relative to the source terminal (solid curve in the y-E diagram).

Page 7, top, change "Patent Claims" to --I Claim--.

A6